



Application No.: 09/125,031

NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS CONTAINING NUCLEOTIDE SEQUENCE AND/OR AMINO ACID SEQUENCE DISCLOSURES

The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 C.F.R. 1.821 - 1.825 for the following reason(s):

- ☒ 1. This application clearly fails to comply with the requirements of 37 C.F.R. 1.821-1.825. Applicant's attention is directed to these regulations.
- ☐ 2. This application does not contain, as a separate part of the disclosure on paper copy, a "Sequence Listing" as required by 37 C.F.R. 1.821(c).
- ☐ 3. A copy of the "Sequence Listing" in computer readable form has not been submitted as required by 37 C.F.R. 1.821(e).
- ☐ 4. A copy of the "Sequence Listing" in computer readable form has been submitted. However, the content of the computer readable form does not comply with the requirements of 37 C.F.R. 1.822 and/or 1.823, as indicated on the attached copy of the marked-up "Raw Sequence Listing."
- ☐ 5. The computer readable form that has been filed with this application has been found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. A Substitute computer readable form must be submitted as required by 37 C.F.R. 1.825(d).
- ☐ 6. The paper copy of the "Sequence Listing" is not the same as the computer readable form of the "Sequence Listing" as required by 37 C.F.R. 1.821(e).
- ☒ 7. Other: The paper and CRF copies of the Sequence Listing filed 20 Dec 2000 contain new matter and do not present the sequence depicted in the figures. Specifically, nucleotide residues 264 and 315 of the sequence listed as SEQ ID NO:7 are not depicted, G has been substituted for C at both residues in the sequence as is now listed.

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Applicant Must Provide:

- ☒ An initial or substitute computer readable form (CRF) copy of the "Sequence Listing".
- ☒ An initial or substitute paper copy of the "Sequence Listing", as well as an amendment directing its entry into the specification.
- ☒ A statement that the content of the paper and computer readable copies are the same and, where applicable, include no new matter, as required by 37 C.F.R. 1.821(e) or 1.821(f) or 1.821(g) or 1.825(b) or 1.825(d).

For questions regarding compliance to these requirements, please contact:

For Rules Interpretation, call (703) 308-4216

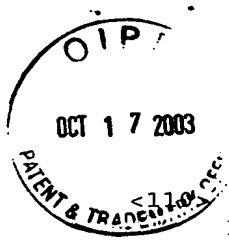
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SEQUENCE LISTING

LONGACRE-ANDRE, SHIRLEY
ROTH, CHARLES
NATO, FARIDABANO
BARNWELL, JOHN
MENDIS, KAMINI

<120> RECOMBINANT PROTEIN CONTAINING A C-TERMINAL FRAGMENT OF PLASMODIUM MSP-1

<130> 0660-0139-0XPCT

<140> 09/125,031

<141> 1999-03-10

<150> PCT/FR97/00290

<151> 1997-02-14

<150> FR96/01822

<151> 1996-02-14

<160> 15

<170> PatentIn version 3.1

<210> 1

<211> 291

<212> DNA

<213> Artificial Sequence

<220>

<223> SYNTHETIC

<220>

<221> CDS

<222> (1)..(291)

<223>

<400> 1

gaa ttc aac atc tcg cag cac caa tgc gtg aaa aaa caa tgt ccc gag 48
Glu Phe Asn Ile Ser Gln His Gln Cys Val Lys Lys Gln Cys Pro Glu
1 5 10 15

aac tct ggc tgt ttc aga cac ttg gac gag aga gag gag tgt aaa tgt 96
Asn Ser Gly Cys Phe Arg His Leu Asp Glu Arg Glu Glu Cys Lys Cys
20 25 30

ctg ctg aac tac aaa cag gag ggc gac aag tgc gtg gag aac ccc aac 144
Leu Leu Asn Tyr Lys Gln Glu Gly Asp Lys Cys Val Glu Asn Pro Asn
35 40 45

ccg acc tgt aac gag aac aac ggc ggc tgt gac gca gac gcc aaa tgc 192
Pro Thr Cys Asn Glu Asn Asn Gly Gly Cys Asp Ala Asp Ala Lys Cys
50 55 60

acc gag gag gac tcg ggc agc aac ggc aag aaa atc acg tgt gag tgt 240
Thr Glu Glu Asp Ser Gly Ser Asn Gly Lys Lys Ile Thr Cys Glu Cys

65	70	75	80	
acc aaa ccc gac tcg tac ccg ctg ttc gac ggc atc ttc tgc agc taa				288
Thr Lys Pro Asp Ser Tyr Pro Leu Phe Asp Gly Ile Phe Cys Ser				
	85	90	95	

taa 291

<210> 2
 <211> 95
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> SYNTHETIC

<400> 2

Glu Phe Asn Ile Ser Gln His Gln Cys Val Lys Lys Gln Cys Pro Glu
1 5 10 15

Asn Ser Gly Cys Phe Arg His Leu Asp Glu Arg Glu Glu Cys Lys Cys
20 25 30

Leu Leu Asn Tyr Lys Gln Glu Gly Asp Lys Cys Val Glu Asn Pro Asn
35 40 45

Pro Thr Cys Asn Glu Asn Asn Gly Gly Cys Asp Ala Asp Ala Lys Cys
50 55 60

Thr Glu Glu Asp Ser Gly Ser Asn Gly Lys Lys Ile Thr Cys Glu Cys
65 70 75 80

Thr Lys Pro Asp Ser Tyr Pro Leu Phe Asp Gly Ile Phe Cys Ser
85 90 95

<210> 3
 <211> 279
 <212> DNA
 <213> Plasmodium falciparum

<400> 3

aacatttcac aacaccaatg cgtaaaaaaa caatgtccag aaaattctgg atgtttcaga	60
catttagatg aaagagaaga atgtaaatgt ttattaaatt acaaacaaga aggtgataaa	120
tgtgttgaaa atccaaatcc tacttgtaac gaaaataatg gtggatgtga tgcagatgcc	180
aatgtaccg aagaagattc aggtagcaac ggaaagaaaa tcacatgtga atgtactaaa	240

cctgattcctt atccactttt cgatgggtatt ttctgcagt

279

<210> 4
 <211> 354
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> SYNTHETIC

<220>
 <221> CDS
 <222> (1)..(354)
 <223>

<400> 4
 gaa ttc aac atc tcg cag cac caa tgc gtg aaa aaa caa tgt ccc gag 48
 Glu Phe Asn Ile Ser Gln His Gln Cys Val Lys Lys Gln Cys Pro Glu
 1 5 10 15
 aac tct ggc tgt ttc aga cac ttg gac gag aga gag gag tgt aaa tgt 96
 Asn Ser Gly Cys Phe Arg His Leu Asp Glu Arg Glu Glu Cys Lys Cys
 20 25 30
 ctg ctg aac tac aaa cag gag ggc gac aag tgc gtg gag aac ccc aac 144
 Leu Leu Asn Tyr Lys Gln Glu Gly Asp Lys Cys Val Glu Asn Pro Asn
 35 40 45
 ccg acc tgt aac gag aac aac ggc ggc tgt gac gca gac gcc aaa tgc 192
 Pro Thr Cys Asn Glu Asn Asn Gly Gly Cys Asp Ala Asp Ala Lys Cys
 50 55 60
 acc gag gag gac tcg ggc agc aac ggc aag aaa atc acg tgt gag tgt 240
 Thr Glu Glu Asp Ser Gly Ser Asn Gly Lys Lys Ile Thr Cys Glu Cys
 65 70 75 80
 acc aaa ccc gac tcg tac ccg ctg ttc gac ggc atc ttc tgc agc tcc 288
 Thr Lys Pro Asp Ser Tyr Pro Leu Phe Asp Gly Ile Phe Cys Ser Ser
 85 90 95
 tct aac ttc ttg ggc atc tcg ttc ttg ttg atc ctc atg ttg atc ttg 336
 Ser Asn Phe Leu Gly Ile Ser Phe Leu Leu Ile Leu Met Leu Ile Leu
 100 105 110
 tac agc ttc att taa taa 354
 Tyr Ser Phe Ile
 115

<210> 5
 <211> 116
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> SYNTHETIC

<400> 5

Glu Phe Asn Ile Ser Gln His Gln Cys Val Lys Lys Gln Cys Pro Glu
1 5 10 15

Asn Ser Gly Cys Phe Arg His Leu Asp Glu Arg Glu Glu Cys Lys Cys
20 25 30

Leu Leu Asn Tyr Lys Gln Glu Gly Asp Lys Cys Val Glu Asn Pro Asn
35 40 45

Pro Thr Cys Asn Glu Asn Asn Gly Gly Cys Asp Ala Asp Ala Lys Cys
50 55 60

Thr Glu Glu Asp Ser Gly Ser Asn Gly Lys Lys Ile Thr Cys Glu Cys
65 70 75 80

Thr Lys Pro Asp Ser Tyr Pro Leu Phe Asp Gly Ile Phe Cys Ser Ser
85 90 95

Ser Asn Phe Leu Gly Ile Ser Phe Leu Leu Ile Leu Met Leu Ile Leu
100 105 110

Tyr Ser Phe Ile
115

<210> 6
<211> 342
<212> DNA
<213> Plasmodium falciparum

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catttagatg aaagagaaga atgtaaatgt ttattaaatt acaaacaaga aggtgataaa 120
tgtgttgaaa atccaaatcc tacttgtaac gaaaataatg gtggatgtga tgcagatgcc 180
aaatgtaccg aagaagattc aggtagcaac ggaaagaaaa tcacatgtga atgtactaaa 240
cctgattctt atccactttt cgatgggtatt ttctgcagtt cctctaactt cttaggaata 300
tcattcttat taatactcat gttaatatta tacagtttca tt 342

<210> 7
<211> 387
<212> DNA

<213> Plasmodium falciparum

<220>

<221> CDS

<222> (1)..(387)

<223>

<400> 7

atg	aag	gcg	cta	ctc	ttt	ttg	ttc	tct	ttc	att	ttt	ttc	gtt	acc	aaa	48
Met	Lys	Ala	Leu	Leu	Phe	Leu	Phe	Ser	Phe	Ile	Phe	Phe	Val	Thr	Lys	
1				5					10					15		

gaa	ttc	aac	atc	tcg	cag	cac	caa	tgc	gtg	aaa	aaa	caa	tgt	ccc	gag	96
Glu	Phe	Asn	Ile	Ser	Gln	His	Gln	Cys	Val	Lys	Lys	Gln	Cys	Pro	Glu	
			20					25					30			

gaa	ttc	aac	atc	tcg	cag	cac	caa	tgc	gtg	aaa	aaa	caa	tgt	ccc	gag	144
Glu	Phe	Asn	Ile	Ser	Gln	His	Gln	Cys	Val	Lys	Lys	Gln	Cys	Pro	Glu	
			35				40					45				

aac	tct	ggc	tgt	ttc	aga	cac	ttg	gac	gag	aga	gag	gag	tgt	aaa	tgt	192
Asn	Ser	Gly	Cys	Phe	Arg	His	Leu	Asp	Glu	Arg	Glu	Glu	Cys	Lys	Cys	
	50					55					60					

ctg	ctg	aac	tac	aaa	cag	gag	ggc	gac	aag	tgc	gtg	gag	aac	ccc	aac	240
Leu	Leu	Asn	Tyr	Lys	Gln	Glu	Gly	Asp	Lys	Cys	Val	Glu	Asn	Pro	Asn	
65					70				75					80		

ccg	acc	tgt	aac	gag	aac	aac	ggc	ggc	tgt	gac	gca	gac	gcc	aaa	tgc	288
Pro	Thr	Cys	Asn	Glu	Asn	Asn	Gly	Gly	Cys	Asp	Ala	Asp	Ala	Lys	Cys	
			85						90					95		

acc	gag	gag	gac	tcg	ggc	agc	aac	ggc	aag	aaa	atc	acg	tgt	gag	tgt	336
Thr	Glu	Glu	Asp	Ser	Gly	Ser	Asn	Gly	Lys	Lys	Ile	Thr	Cys	Glu	Cys	
			100					105					110			

acc	aaa	ccc	gac	tcg	tac	ccg	ctg	ttc	gac	ggc	atc	ttc	tgc	agc	taa	384
Thr	Lys	Pro	Asp	Ser	Tyr	Pro	Leu	Phe	Asp	Gly	Ile	Phe	Cys	Ser		
		115					120					125				

taa																387
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<210> 8

<211> 127

<212> PRT

<213> Plasmodium falciparum

<400> 8

Met	Lys	Ala	Leu	Leu	Phe	Leu	Phe	Ser	Phe	Ile	Phe	Phe	Val	Thr	Lys
1				5					10					15	

Glu	Phe	Asn	Ile	Ser	Gln	His	Gln	Cys	Val	Lys	Lys	Gln	Cys	Pro	Glu
			20					25					30		

Glu Phe Asn Ile Ser Gln His Gln Cys Val Lys Lys Gln Cys Pro Glu
35 40 45

Asn Ser Gly Cys Phe Arg His Leu Asp Glu Arg Glu Glu Cys Lys Cys
50 55 60

Leu Leu Asn Tyr Lys Gln Glu Gly Asp Lys Cys Val Glu Asn Pro Asn
65 70 75 80

Pro Thr Cys Asn Glu Asn Asn Gly Gly Cys Asp Ala Asp Ala Lys Cys
85 90 95

Thr Glu Glu Asp Ser Gly Ser Asn Gly Lys Lys Ile Thr Cys Glu Cys
100 105 110

Thr Lys Pro Asp Ser Tyr Pro Leu Phe Asp Gly Ile Phe Cys Ser
115 120 125

<210> 9
<211> 330
<212> DNA
<213> Plasmodium falciparum

<220>
<221> CDS
<222> (1)..(330)
<223>

Hi
cond

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1 5 10 15
atc tcg cag cac caa tgc gtg aaa aaa caa tgt ccc gag aac tct ggc 96
Ile Ser Gln His Gln Cys Val Lys Lys Gln Cys Pro Glu Asn Ser Gly
20 25 30
tgt ttc aga cac ttg gac gag aga gag gag tgt aaa tgt ctg ctg aac 144
Cys Phe Arg His Leu Asp Glu Arg Glu Glu Cys Lys Cys Leu Leu Asn
35 40 45
tac aaa cag gag ggc gac aag tgc gtg gag aac ccc aac ccg acc tgt 192
Tyr Lys Gln Glu Gly Asp Lys Cys Val Glu Asn Pro Asn Pro Thr Cys
50 55 60
aac gag aac aac ggc ggc tgt gac gca gac gcc aaa tgc acc gag gag 240
Asn Glu Asn Asn Gly Gly Cys Asp Ala Asp Ala Lys Cys Thr Glu Glu
65 70 75 80
gac tcg ggc agc aac ggc aag aaa atc acg tgt gag tgt acc aaa ccc 288

Asp Ser Gly Ser Asn Gly Lys Lys Ile Thr Cys Glu Cys Thr Lys Pro
85 90 95

gac tcg tac ccg ctg ttc gac ggc atc ttc tgc agc taa taa
Asp Ser Tyr Pro Leu Phe Asp Gly Ile Phe Cys Ser
100 105

330

<210> 10
<211> 108
<212> PRT
<213> Plasmodium falciparum

<400> 10

Glu Thr Glu Ser Tyr Lys Gln Leu Val Ala Asn Val Asp Glu Phe Asn
1 5 10 15

Ile Ser Gln His Gln Cys Val Lys Lys Gln Cys Pro Glu Asn Ser Gly
20 25 30

Cys Phe Arg His Leu Asp Glu Arg Glu Glu Cys Lys Cys Leu Leu Asn
35 40 45

Tyr Lys Gln Glu Gly Asp Lys Cys Val Glu Asn Pro Asn Pro Thr Cys
50 55 60

Asn Glu Asn Asn Gly Gly Cys Asp Ala Asp Ala Lys Cys Thr Glu Glu
65 70 75 80

Asp Ser Gly Ser Asn Gly Lys Lys Ile Thr Cys Glu Cys Thr Lys Pro
85 90 95

Asp Ser Tyr Pro Leu Phe Asp Gly Ile Phe Cys Ser
100 105

<210> 11
<211> 379
<212> PRT
<213> Plasmodium cynomolgi

<400> 11

Asp Gln Val Thr Thr Gly Glu Ala Glu Ser Glu Ala Pro Glu Ile Ile
1 5 10 15

Val Pro Gln Gly Ile Asn Glu Tyr Asp Val Val Tyr Ile Lys Pro Leu
20 25 30

Ala Gly Met Tyr Lys Thr Ile Lys Lys Pro Leu Glu Asn His Val Asn
35 40 45

Ala Leu Asn Thr Asn Ile Ile Asp Met Leu Asp Ser Arg Leu Lys Lys
50 55 60

Arg Asn Tyr Phe Leu Asp Val Leu Asn Ser Asp Leu Asn Pro Tyr Ser
65 70 75 80

Ile Pro His Ser Gly Glu Tyr Ile Ile Lys Asp Pro Tyr Lys Leu Leu
85 90 95

Asp Leu Glu Lys Lys Lys Leu Leu Gly Ser Tyr Lys Tyr Ile Gly Ala
100 105 110

Ser Val Asp Lys Asp Met Val Thr Ala Asn Asp Gly Leu Ala Tyr Tyr
115 120 125

Gln Lys Met Gly Asp Leu Tyr Lys Lys His Leu Asp Glu Val Asn Ala
130 135 140

Cys Ile Lys Glu Val Glu Ala Asn Ile Asn Lys His Asp Glu Glu Ile
145 150 155 160

Lys Lys Ile Gly Ser Glu Ala Ser Lys Ala Asn Asp Lys Asn Gln Leu
165 170 175

Asn Ala Lys Lys Glu Glu Leu Gln Lys Tyr Leu Pro Phe Leu Ser Ser
180 185 190

Ile Gln Lys Glu Tyr Ser Thr Leu Val Asn Lys Val His Ser Tyr Thr
195 200 205

Asp Thr Leu Lys Lys Ile Ile Asn Asn Cys Gln Ile Glu Lys Lys Glu
210 215 220

Thr Glu Thr Ile Val Asn Lys Leu Glu Asp Tyr Ser Lys Met Asp Glu
225 230 235 240

Glu Leu Asp Val Tyr Lys Gln Ser Lys Lys Glu Asp Asp Val Lys Ser
245 250 255

Ser Gly Leu Leu Glu Lys Leu Met Asn Ser Lys Leu Ile Asn Gln Glu
260 265 270

Glu Ser Lys Lys Ala Leu Ser Glu Leu Leu Asn Val Gln Thr Gln Met
275 280 285

Leu Asn Met Ser Ser Glu His Arg Cys Ile Asp Thr Asn Val Pro Glu
290 295 300

Asn Ala Ala Cys Tyr Arg Tyr Leu Asp Gly Thr Glu Glu Trp Arg Cys
305 310 315 320

Leu Leu Tyr Phe Lys Glu Asp Ala Gly Lys Cys Val Pro Ala Pro Asn
325 330 335

Met Thr Cys Lys Asp Lys Asn Gly Gly Cys Ala Pro Glu Ala Glu Cys
340 345 350

Lys Met Asn Asp Lys Asn Glu Ile Val Cys Lys Cys Thr Lys Glu Gly
355 360 365

Ser Glu Pro Leu Phe Glu Gly Val Phe Cys Ser
370 375

<210> 12
<211> 380
<212> PRT
<213> Plasmodium vivax-like sp.

<400> 12

Asp Gln Val Thr Thr Gly Glu Ala Glu Ser Glu Ala Pro Glu Ile Leu
1 5 10 15

Val Pro Ala Gly Ile Ser Asp Tyr Asp Val Val Tyr Leu Lys Pro Leu
20 25 30

Ala Gly Met Tyr Lys Thr Ile Lys Lys Gln Leu Glu Asn His Val Asn
35 40 45

Ala Phe Asn Thr Asn Ile Thr Asp Met Leu Asp Ser Arg Leu Lys Lys
50 55 60

Arg Asn Tyr Phe Leu Glu Val Leu Asn Ser Asp Leu Asn Pro Phe Lys
65 70 75 80

Tyr Ser Pro Ser Gly Glu Tyr Ile Ile Lys Asp Pro Tyr Lys Leu Leu
85 90 95

Asp Leu Glu Lys Lys Lys Lys Leu Leu Gly Ser Tyr Lys Tyr Ile Gly
100 105 110

Ala Ser Ile Asp Lys Asp Leu Ala Thr Ala Asn Asp Gly Val Thr Tyr
115 120 125

Tyr Asn Lys Met Gly Glu Leu Tyr Lys Thr His Leu Thr Ala Val Asn
130 135 140

Glu Glu Val Lys Lys Val Glu Ala Asp Ile Lys Ala Glu Asp Asp Lys
145 150 155 160

Ile Lys Lys Ile Gly Ser Asp Ser Thr Lys Thr Thr Glu Lys Thr Gln
165 170 175

Ser Met Ala Lys Lys Ala Glu Leu Glu Lys Tyr Leu Pro Phe Leu Asn
180 185 190

Ser Leu Gln Lys Glu Tyr Glu Ser Leu Val Ser Lys Val Asn Thr Tyr
195 200 205

Thr Asp Asn Leu Lys Lys Val Ile Asn Asn Cys Gln Leu Glu Lys Lys
210 215 220

Glu Ala Glu Ile Thr Val Lys Lys Leu Gln Asp Tyr Asn Lys Met Asp
225 230 235 240

Glu Lys Leu Glu Glu Tyr Lys Lys Ser Glu Lys Lys Asn Glu Val Lys
245 250 255

Ser Ser Gly Leu Leu Glu Lys Leu Met Lys Ser Lys Leu Ile Lys Glu
260 265 270

Asn Glu Ser Lys Glu Ile Leu Ser Gln Leu Leu Asn Val Gln Thr Gln
275 280 285

Leu Leu Thr Met Ser Ser Glu His Thr Cys Ile Asp Thr Asn Val Pro
290 295 300

Asp Asn Ala Ala Cys Tyr Arg Tyr Leu Asp Gly Thr Glu Glu Trp Arg
305 310 315 320

Cys Leu Leu Thr Phe Lys Glu Glu Gly Gly Lys Cys Val Pro Ala Ser
325 330 335

Asn Val Thr Cys Lys Asp Asn Asn Gly Gly Cys Ala Pro Glu Ala Glu
340 345 350

Cys Lys Met Thr Asp Ser Asn Lys Ile Val Cys Lys Cys Thr Lys Glu
355 360 365

Gly Ser Glu Pro Leu Phe Glu Gly Val Phe Cys Ser
370 375 380

<210> 13
<211> 380
<212> PRT
<213> Plasmodium vivax-like sp.

<400> 13

Asp Gln Val Thr Thr Gly Glu Ala Glu Ser Glu Ala Pro Glu Ile Leu
1 5 10 15

Val Pro Ala Gly Ile Ser Asp Tyr Asp Val Val Tyr Leu Lys Pro Leu
20 25 30

Ala Gly Met Tyr Lys Thr Ile Lys Lys Gln Leu Glu Asn His Val Asn
35 40 45

Ala Phe Asn Thr Asn Ile Thr Asp Met Leu Asp Ser Arg Leu Lys Lys
50 55 60

Arg Asn Tyr Phe Leu Glu Val Leu Asn Ser Asp Leu Asn Pro Phe Lys
65 70 75 80

Tyr Ser Ser Ser Gly Glu Tyr Ile Ile Lys Asp Pro Tyr Lys Leu Leu
85 90 95

Asp Leu Glu Lys Lys Lys Lys Leu Ile Gly Ser Tyr Lys Tyr Ile Gly
100 105 110

Ala Ser Ile Asp Met Asp Leu Ala Thr Ala Asn Asp Gly Val Thr Tyr

115

120

125

Tyr Asn Lys Met Gly Glu Leu Tyr Lys Thr His Leu Asp Gly Val Lys
130 135 140

Thr Glu Ile Lys Lys Val Glu Asp Asp Ile Lys Lys Gln Asp Glu Glu
145 150 155 160

Leu Lys Lys Leu Gly Asn Val Asn Ser Gln Asp Ser Lys Lys Asn Glu
165 170 175

Phe Ile Ala Lys Lys Ala Glu Leu Glu Lys Tyr Leu Pro Phe Leu Asn
180 185 190

Ser Leu Gln Lys Glu Tyr Glu Ser Leu Val Ser Lys Val Asn Thr Tyr
195 200 205

Thr Asp Asn Leu Lys Lys Val Ile Asn Asn Cys Gln Leu Glu Lys Lys
210 215 220

Glu Ala Glu Ile Thr Val Lys Lys Leu Gln Asp Tyr Asn Lys Met Asp
225 230 235 240

Glu Lys Leu Glu Glu Tyr Lys Lys Ser Glu Lys Lys Asn Glu Val Lys
245 250 255

Ser Ser Gly Leu Leu Glu Lys Leu Met Lys Ser Lys Leu Ile Lys Glu
260 265 270

Asn Glu Ser Lys Glu Ile Leu Ser Gln Leu Leu Asn Val Gln Thr Gln
275 280 285

Leu Leu Thr Met Ser Ser Glu His Thr Cys Ile Asp Thr Asn Val Pro
290 295 300

Asp Asn Ala Ala Cys Tyr Arg Tyr Leu Asp Gly Thr Glu Glu Trp Arg
305 310 315 320

Cys Leu Leu Thr Phe Lys Glu Glu Gly Gly Lys Cys Val Pro Ala Ser
325 330 335

Asn Val Thr Cys Lys Asp Asn Asn Gly Gly Cys Ala Pro Glu Ala Glu
340 345 350

Cys Lys Met Thr Asp Ser Asn Lys Ile Val Cys Lys Cys Thr Lys Glu
 355 360 365

Gly Ser Glu Pro Leu Phe Glu Gly Val Phe Cys Ser
 370 375 380

<210> 14
 <211> 281
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> SYNTHETIC

<400> 14

Asp Gln Val Thr Thr Gly Glu Ala Glu Ser Glu Ala Pro Glu Ile Val
 1 5 10 15

Pro Gly Ile Tyr Asp Val Val Tyr Lys Pro Leu Ala Gly Met Tyr Lys
 20 25 30

Thr Ile Lys Lys Leu Glu Asn His Val Asn Ala Asn Thr Asn Ile Asp
 35 40 45

Met Leu Asp Ser Ala Leu Lys Lys Ala Asn Tyr Phe Leu Val Leu Asn
 50 55 60

Ser Asp Leu Asn Pro Ser Gly Glu Tyr Ile Ile Lys Asp Pro Tyr Lys
 65 70 75 80

Leu Leu Asp Leu Glu Lys Lys Lys Leu Gly Ser Tyr Lys Tyr Ile Gly
 85 90 95

Ala Ser Asp Asp Thr Ala Asn Asp Gly Tyr Tyr Lys Met Gly Leu Tyr
 100 105 110

Lys His Leu Val Lys Val Glu Ile Asp Lys Lys Gly Lys Ala Lys Lys
 115 120 125

Glu Leu Lys Tyr Leu Pro Phe Leu Ser Gln Lys Glu Tyr Leu Val Lys
 130 135 140

Val Tyr Thr Asp Leu Lys Lys Ile Asn Asn Cys Gln Glu Lys Lys Glu

145 150 155 160
 Glu Val Lys Leu Asp Tyr Lys Met Asp Glu Leu Tyr Lys Ser Lys Val
 165 170 175
 Lys Ser Ser Gly Leu Leu Glu Lys Leu Met Ser Lys Leu Ile Glu Ser
 180 185 190
 Lys Leu Ser Leu Leu Asn Val Gln Thr Gln Leu Met Ser Ser Glu His
 195 200 205
 Cys Ile Asp Thr Asn Val Pro Asn Ala Ala Cys Tyr Arg Tyr Leu Asp
 210 215 220
 Gly Thr Glu Glu Trp Arg Cys Leu Leu Phe Lys Glu Gly Lys Cys Val
 225 230 235 240
 Pro Ala Asn Thr Cys Lys Asp Asn Gly Gly Cys Ala Pro Glu Ala Glu
 245 250 255
 Cys Lys Met Asp Asn Ile Val Cys Lys Cys Thr Lys Glu Gly Ser Glu
 260 265 270
 Pro Leu Phe Glu Gly Val Phe Cys Ser
 275 280

<210> 15
 <211> 6
 <212> PRT
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> SYNTHETIC

<400> 15

Leu Asn Val Gln Thr Gln
 1 5